AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1. (Currently Amended): A communication method, comprising:

transmitting a multipath characteristic measurement signal and a plurality of data transmission signals from a transmitter device of a communication system, the multipath characteristic measurement signal and data transmission signals being received by a reception processing device of the communication system,

wherein, in the reception processing device, the multipath characteristic measurement signal and data transmission signals are a signal array formed by a plurality of coefficient matrices each having row vectors that are orthogonal to one another within the matrices and which comprise at least one coefficient array that is common in the column direction or row direction; and

the multipath characteristic measurement signal formed by the respective coefficient matrices is the same signal array formed by the one common coefficient array,

wherein a multipath characteristic measurement signal array is formed by using one row vector or column vector coefficient array with respect to the multipath characteristic measurement signal, and, by forming a data transmission signal array by using a row vector coefficient array that is orthogonal to the row vector or a column vector coefficient array that is orthogonal to the column vector with respect to the plurality of data transmission signals, the

transmitted multipath characteristic measurement signal and plurality of data transmission signals are uncorrelated.

2. (Cancelled).

3. (Currently Amended): The communication method according to claim [[2]] 1, wherein the row vector or column vector is a row vector or column vector that a Hadamard matrix or unitary matrix comprises.

4. (Currently Amended): The communication method according to claim [[2]] 1, wherein the number of row vectors or column vectors used in the formation of the data transmission signal array is established on the basis of the received multipath characteristic measurement signals.

5. (Currently Amended): The communication method according to claim [[2]] 1, wherein the interval between the multipath characteristic measurement signals in the multipath characteristic measurement signal array and the interval between the data transmission signals in the data transmission signal array are changed on the basis of the received multipath characteristic measurement signals.

6. (Previously Presented): The communication method according to claim 1, wherein an arbitrary user arbitrarily has a matched filter that corresponds with a coefficient array that is used in the formation of a transmission data array and receives an arbitrary data transmission signal via the matched filter.

7. (Currently Amended): A method of forming a transmission signal in a reception processing device, comprising the steps of:

forming, in the reception processing device, a matrix of an arbitrary length by selecting, from a plurality of orthogonal square matrices that comprise a common row vector or column vector, the common row vector or column vector and an arbitrary number of row vectors or column vectors that are orthogonal to the common row vector or column vector;

forming, in the reception processing device, a multipath characteristic measurement signal array by multiplying each of the coefficient arrays of the common row vector or column vector by a multipath characteristic measurement signal;

forming, in the reception processing device, a data transmission signal array by multiplying each of the coefficient arrays of the other row vector or column vector in the matrix by each of the plurality of data transmission signals; and

rendering, in the reception processing device, the multipath characteristic measurement signal array and data transmission signal array a transmission signal.

wherein, when forming a multipath characteristic measurement signal array and a data transmission signal array by multiplying the respective row vector or column vector coefficient arrays by the multipath characteristic measurement signal and data transmission signal,

zero data sequence of a predetermined length is added between the respective signals multiplied by the coefficient arrays and the interval between the multipath characteristic measurement signals in the multipath characteristic measurement signal array and the interval between the data transmission signals in the data transmission signal array are determined.

8. (Original): The method of forming a transmission signal according to claim 7, wherein the orthogonal square matrix is a Hadamard matrix or a unitary matrix.

9. (Cancelled).

10. (Previously Presented): The communication method according to claim 7, wherein the number of row vectors or column vectors used in the formation of the data transmission signal array is established on the basis of the received multipath characteristic measurement signals.

11. (Currently Amended): The method of forming a transmission signal according to claim [[9]] 7, wherein the interval between the multipath characteristic measurement signals in the multipath characteristic measurement signal array and the interval between the data

transmission signals in the data transmission signal array are changed on the basis of the received multipath characteristic measurement signals.

12. (Previously Presented): A transmission signal data structure formed by the method of forming a transmission signal according to claim 6.